

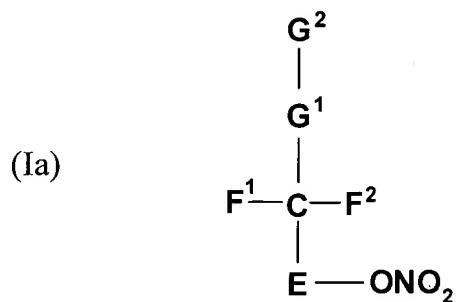
AMENDMENTS

Kindly add new claims 44-46 and amend claims 11, 13, 33, 36, 37, 38, and 40 as provided in the following Claims Listing.

Claims Listing:

Claims 1 – 10 (Canceled)

11. (Currently amended) A method for providing sedation, mitigating reducing anxiety, aiding sleep, or inducing sleep or providing anaesthesia in a subject in need thereof, comprising administering to the subject an effective amount of a therapeutic compound, wherein said therapeutic compound is of the formula (Ia):



, in which

F² is a nitrate group or an organic radical which may be joined in a cyclic ring system with G², and which may contain inorganic counterions;

E is a methylene group;

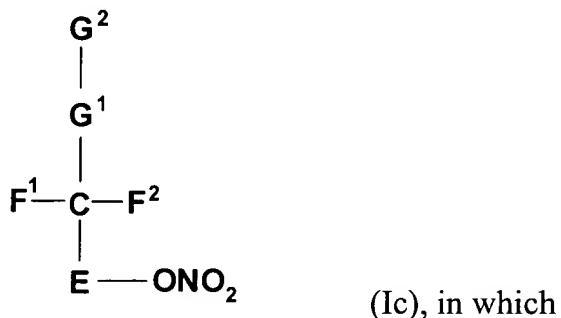
G^1 is a methylene group or does not exist;

F^1 is H; and

G^2 is joined with F^2 to form a cyclic system or is R^N-Z^N ; wherein R^N is an organic radical possessing a heteroaryl group containing a P or S atom, where said P or S is positioned β , γ , or δ to a nitrate group; and Z^N is $W^N_{mm}-X^N_{nn}-Y^N_{oo}$; wherein mm, nn, oo are 0 or 1 and W^N , X^N , Y^N are NH, NR^{NN}, CO, O, or CH₂; wherein R^{NN} is a C₁ – C₁₂ alkyl group.

12. (Cancelled)

13. (Currently amended) A method for providing sedation, mitigating reducing anxiety, aiding sleep, or inducing sleep or providing anaesthesia in a subject in need thereof, comprising administering to said subject an effective amount of a therapeutic compound, wherein said therapeutic compound is of the formula (Ic):



E is $(R^1R^2C)_m$ and $G^2-G^1-CF^1F^2-$ is $R^{19}-(R^3R^4C)_p-(R^{17}R^{18}C)_n-$; wherein

each of m, n, and p is an integer from 0 to 10;

R³⁺¹⁷ R³ and R¹⁷ are each independently hydrogen, a nitrate group, or A; and

R⁴⁺⁴ R¹ and R⁴ are each independently hydrogen, or A;

where A is selected from a substituted or unsubstituted aliphatic group comprising a branched or straight-chain aliphatic moiety having from 1 to 24 carbon atoms in the chain, which optionally may contain O, S, NR⁶, or an unsaturation in the chain, optionally bearing from 1 to 4 hydroxy, nitrate, amino, aryl, or heterocyclic groups; an unsubstituted or substituted cyclic aliphatic moiety having from 3 to 7 carbon atoms in the aliphatic ring, which optionally may contain O, S, NR⁶, or an unsaturation in the ring, optionally bearing from 1 to 4 hydroxy, nitrate, amino, aryl, or heterocyclic groups; an unsubstituted or substituted aliphatic moiety constituting a linkage of from 0 to 5 carbons, between R¹ and R³ and/or between R¹⁷ and R⁴, which optionally may contain O, S, NR⁶, or an unsaturation in the linkage, and optionally bearing from 1 to 4 hydroxy, nitrate, amino, aryl, or heterocyclic groups; a substituted or unsubstituted aliphatic group comprising a branched, cyclic or straight-chain aliphatic moiety having from 1 to 24 carbon atoms in the chain, containing linkages selected from the group consisting of C=O, C=S, and C=NOH, which optionally may contain O, S, NR⁶, or an unsaturation in the chain, optionally bearing from 1 to 4 hydroxy, nitrate, amino, aryl, or heterocyclic groups; a substituted or unsubstituted aryl group; a substituted or unsubstituted heterocyclic group; an amino group selected from alkylamino, dialkylamino, cyclic amino, diamino, triamino,

arylarnino, diarylarnino, and alkylarylarnino moieties; hydroxy; alkoxy; and a substituted or unsubstituted aryloxy; wherein

X is F, Br, Cl, NO₂, CH₂, CF₂, O, NH, NMe, CN, NHOH, N₂H₃, N₂H₂R¹³, N₂HR¹³R¹⁴, N₃, S, SCN, SCN₂H₂(R¹⁵)₂, SCN₂H₃(R¹⁵), SC(O)N(R¹⁵)₂, SC(O)NHR¹⁵, SO₃M, SH, SR⁷, SO₂M, S(O)R⁸, S(O)₂R⁹, S(O)OR⁸, S(O)₂OR⁹, PO₂HM, PO₃HM, PO₃M₂, P(O)(OR¹⁵)(OR¹⁶), P(O)(OR¹⁶)(OM), P(O)(R¹⁵)(OR⁸), P(O)(OM)R¹⁵, CO₂M, CO₂H, CO₂R¹¹, C(O), C(O)R¹², C(O)(OR¹³), PO₂H, PO₂M, P(O)(OR¹⁴), P(O)(R¹³), SO, SO₂, C(O)(SR¹³), SR⁵, SSR⁷ or SSR⁵;

Y is F, Br, Cl, CH₃, CF₂H, CF₃, OH, NH₂, NHR⁶, NR⁶R⁷, CN, NHOH, N₂H₃, N₂H₂R¹³, N₂HR¹³R¹⁴, N₃, S, SCN, SCN₂H₂(R¹⁵)₂, SCN₂H₃(R¹⁵), SC(O)N(R¹⁵)₂, SC(O)NHR¹⁵, SO₃M, SH, SR⁷, SO₂M, S(O)R⁸, S(O)₂R⁹, S(O)OR⁸, S(O)₂OR⁹, PO₂HM, PO₃M₂, P(O)(OR¹⁵)(OR¹⁶), P(O)(OR¹⁶)(OM), P(O)(R¹⁵)(OR⁸), P(O)(OM)R¹⁵, CO₂M, CO₂H, CO₂R¹¹, C(O)R¹², C(O)(OR¹³), C(O)(SR¹³), SR⁵, SSR⁷ or SSR⁵, or does not exist;

each of R², R⁵, R¹⁸, and R¹⁹ is, independently, hydrogen, A, or X-Y;

each of R⁶, R⁷, R⁸, R⁹, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶ is, independently, an alkyl or acyl group containing 1-24 carbon atoms, which may contain 1-4 ONO₂ substituents; a C₁ - C₆ connection to R¹ – R⁴ in a cyclic derivative, which may contain 1-4 ONO₂ substituents; a hydrogen, a nitrate group, or A;

M is H, Na⁺, K⁺, NH₄⁺, or N⁺H_kR¹¹_(4-k), where k is 0-3; or other pharmaceutically acceptable counterion;

and with the proviso that when $m = n = p = 1$ and $R^{19}, R^2, R^{18}, R^1 = H$ and R^{17}, R^3 are nitrate groups, R^4 is not H.

14. (Previously presented) The method of claim 11, wherein F^2 is a nitrate group; with the proviso that when E and G^1 are methylene groups and F^1 is H, G^2 is not R^N-Z^N ; wherein

R^N is any aryl or heteroaryl group and Z^N is $(CO)_{mm}-X^N_{nn}-Y^N_{oo}$; wherein mm, nn, oo are 0 or 1 and X^N, Y^N are NH, NR^{NN}, O or CH₂; wherein R^{NN} is a C₁ – C₁₂ alkyl group.

15. (Previously presented) The method of claim 11, wherein F^2 is a nitrate group; E and G^1 are methylene groups; F^1 is H; and G^2 is R^N-Z^N ; wherein R^N is an organic radical possessing an heteroaryl group containing P or S atoms where said P or S are positioned β , γ , or δ to a nitrate group as identified in formula Ia; and Z^N is $W^N_{mm}-X^N_{nn}-Y^N_{oo}$; wherein mm, nn, oo are 0 or 1 and W^N, X^N, Y^N are NH, NR^{NN}, CO, O or CH₂; wherein R^{NN} is a C₁ – C₁₂ alkyl group.

16. (Original) The method of claim 13, wherein R^{19} is X-Y.

17. (Previously presented) The method of claim 16, wherein:

R¹ and R³ are the same or different and selected from H and C₁-C₄ alkyl chains, which chains may include one O linking R¹ and R³ to form pentosyl, hexosyl, cyclopentyl, or cyclohexyl rings, which rings may optionally bear hydroxyl substituents;

R² and R⁴ are the same or different and selected from H, a nitrate group, a C₁-C₄ alkyl chain, optionally bearing 1-3 nitrate groups, and an acyl group (-C(O)R⁵); R⁷ and R¹¹ are the same or different C₁ - C₈ alkyl or C₁ - C₈ acyl; each of R⁵, R⁶, R⁸, R⁹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶ is, independently, an alkyl group containing 1-12 carbon atoms, which may contain 1-4 ONO₂ substituents; or a C₁ or C₂ connection to R¹ - R³ in a cyclic derivative; and

M is H, Na⁺, K⁺, NH₄⁺ or N⁺H_kR¹¹_(4-k), where k is 0-3.

18. (Original) The method of claim 17, wherein m = 1, n = 0, p=1.

19. (Previously presented) The method of claim 18, wherein:

X is CH₂, O, NH, NMe, CN, NHOH, N₂H₃, N₂H₂R¹³, N₂HR¹³R¹⁴, N₃, S, SCN, SCN₂H₂(R¹⁵)₂, SCN₂H₃(R¹⁵), SC(O)N(R¹⁵)₂, SC(O)NHR¹⁵, SO₃M, SH, SR⁷, SO₂M, S(O)R⁸, S(O)₂R⁹, S(O)OR⁸, S(O)₂OR⁹, PO₃HM, PO₃M₂, P(O)(OR¹⁵)(OR¹⁶), P(O)(OR¹⁶)(OM), P(O)(R¹⁵)(OR⁸), P(O)(OM)R¹⁵, CO₂M, CO₂H, CO₂R¹¹, C(O), C(O)R¹², C(O)(OR¹³), PO₂M, P(O)(OR¹⁴), P(O)(R¹³), SO, SO₂, C(O)(SR¹³), or SSR⁵; and

Y is CN, N₂H₂R¹³, N₂HR¹³R¹⁴, N₃, SCN, SCN₂H₂(R¹⁵)₂, SC(O)N(R¹⁵)₂, SC(O)NHR¹⁵, SO₃M, SR⁴, SO₂M, PO₃HM, PO₃M₂, P(O)(OR¹⁵)(OR¹⁶), P(O)(OR¹⁶)(OM), P(O)(R¹⁵)(OR⁸), P(O)(OM)R¹⁵, CO₂M, CO₂H, CO₂R¹¹, C(O)R¹², C(O)(SR¹³), SR⁵, or SSR⁵, or does not exist.

20. (Previously presented) The method of claim 18, wherein:
each of R⁵, R⁶, R⁸, R⁹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶ is, independently, an alkyl group containing 1-12 carbon atoms, which may contain 1-4 ONO₂ substituents; or a C₁ or C₂ connection to R¹ - R³ in a cyclic derivative

X is CH₂, O, NH, NMe, S, SO₃M, SH, SR⁷, SO₂M, S(O)R⁸, S(O)₂R⁹, S(O)OR⁸, S(O)₂OR⁹, PO₃M₂, P(O)(OR¹⁵)(OR¹⁶), P(O)(OR¹⁶)(OM), P(O)(R¹⁵)(OR⁸), PO₃HM or P(O)(OM)R¹⁵; and

Y is SO₂M, SO₃M, PO₃HM, PO₃M₂, P(O)(OR¹⁵)(OR¹⁶), P(O)(OR¹⁶)(OM), SR⁵, SSR⁷ or SSR⁵, or does not exist.

21. (Canceled)

22. (Original) The method of claim 13, with the proviso that when m = n = p = 1 and R¹⁹, R², R¹⁸, R¹ = H and R¹⁷, R³ are nitrate groups, R⁴ is not C₁ - C₃ alkyl.

23. (Canceled)

24. (Previously presented) The method of any one of claims 11, 13, 14 or 15, further comprising administering said therapeutic compound with a pharmaceutically acceptable vehicle.

25. (Canceled)

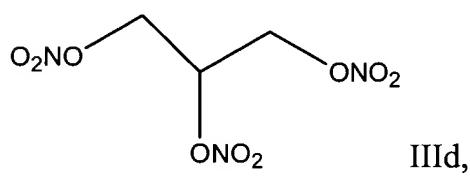
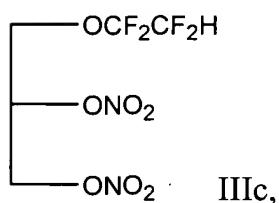
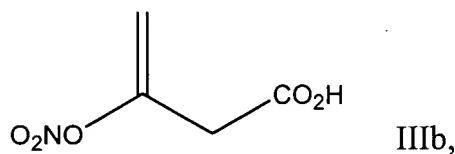
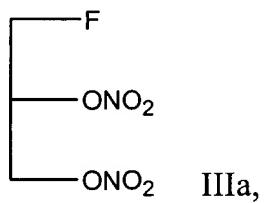
26. (Previously presented) The method of any one of claims 11, 13, 14, or 15, wherein said therapeutic compound modulates levels of the cyclic nucleotides cGMP and/or cAMP in said subject.

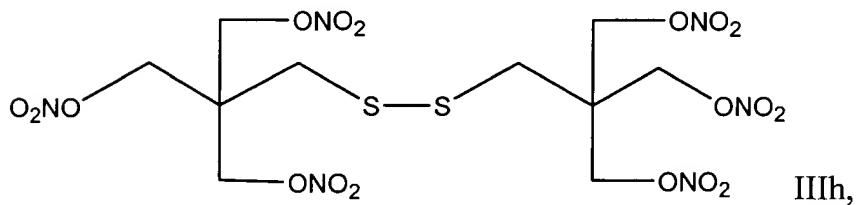
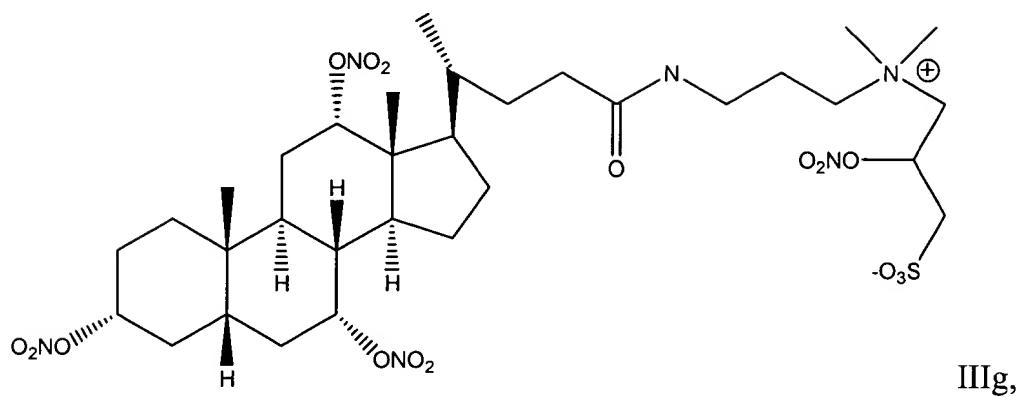
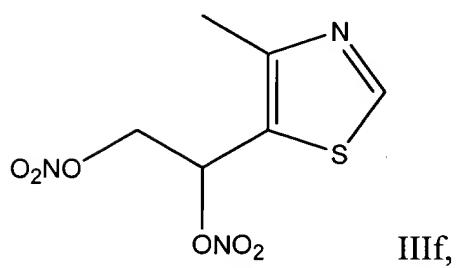
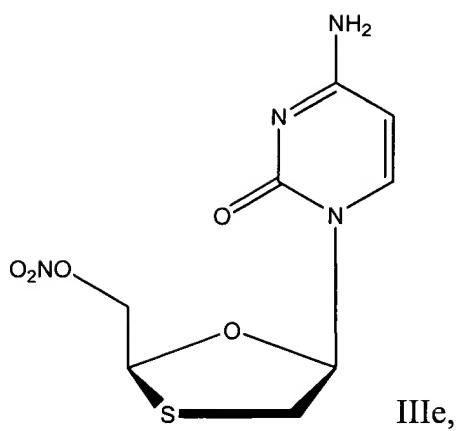
27. (Canceled)

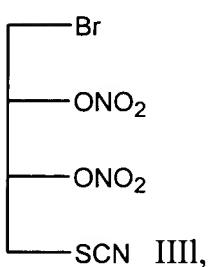
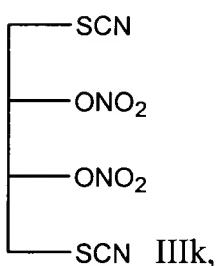
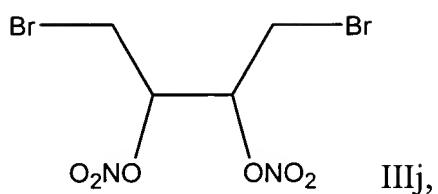
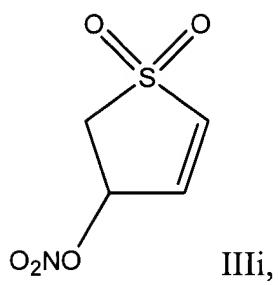
28. (Previously presented) The method of any one of claims 11, 13, 14, or 15, wherein said therapeutic compound modulates guanylyl cyclase activity in said subject.

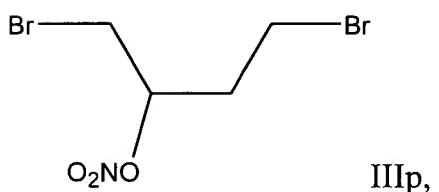
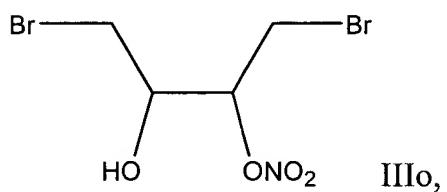
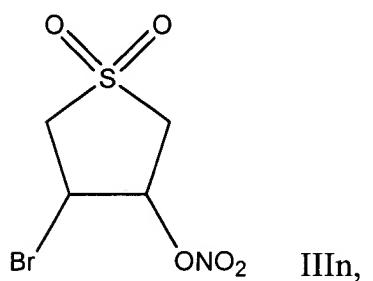
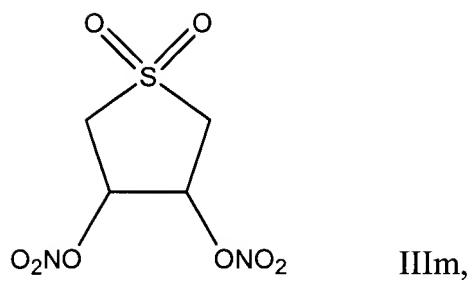
Claims 29-32 (Canceled)

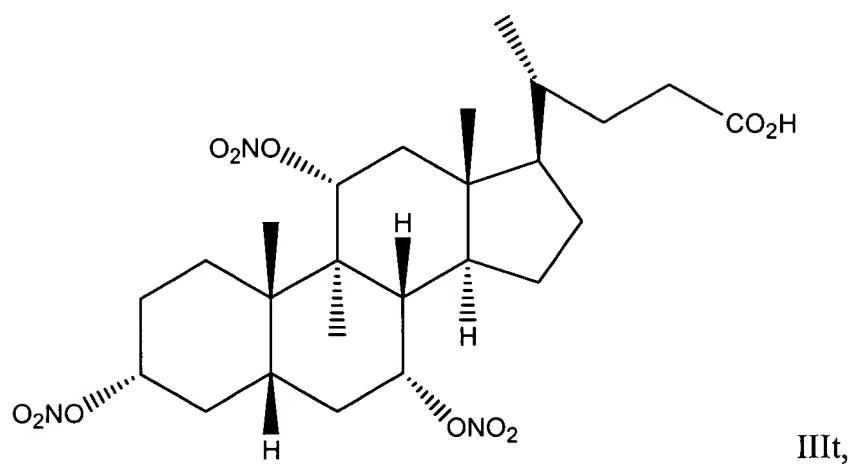
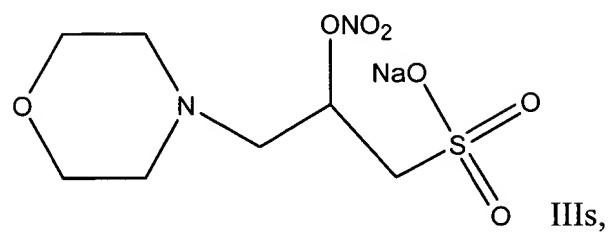
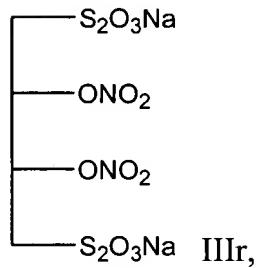
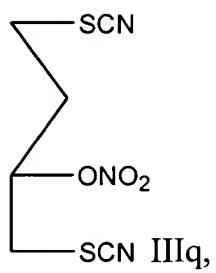
33. (Currently amended) A method of providing sedation or mitigating reducing anxiety, aiding sleep, or inducing sleep in a subject in need thereof, comprising administering to the subject an effective amount of a therapeutic compound selected from the group consisting of:

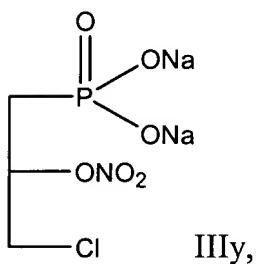
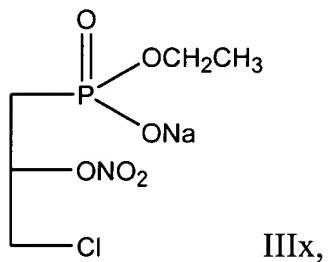
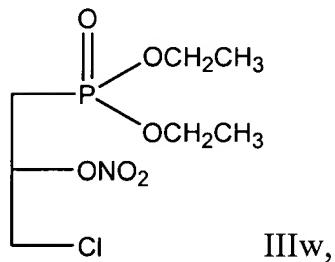
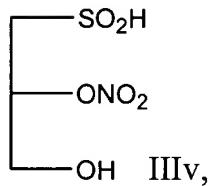
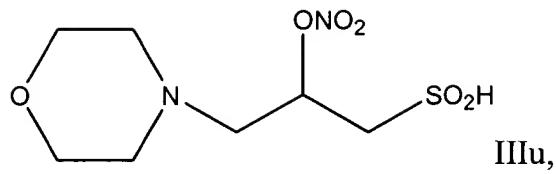


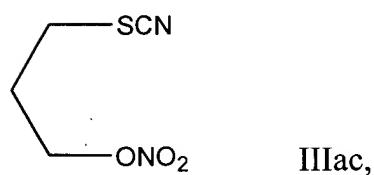
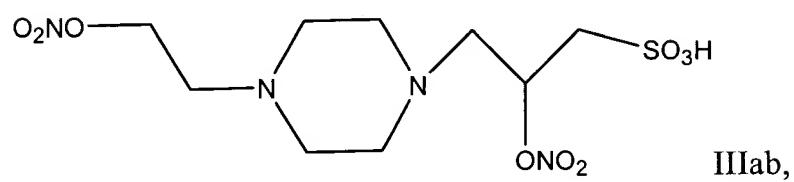
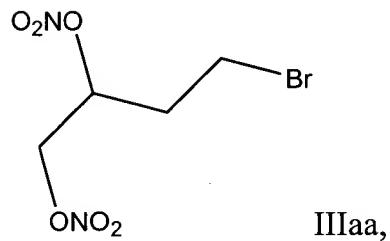
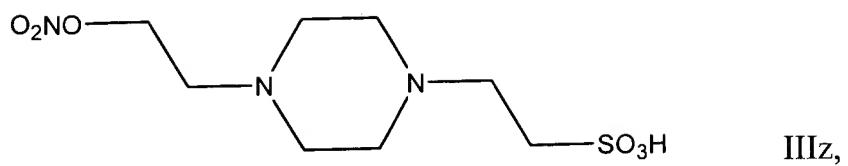


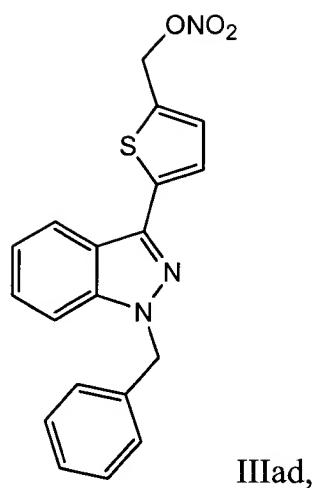




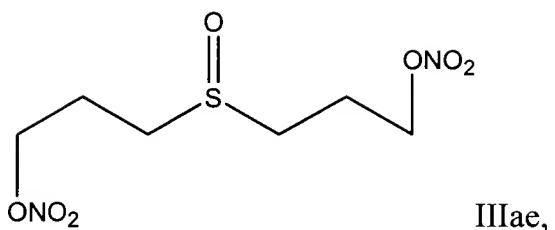




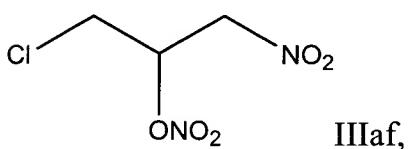




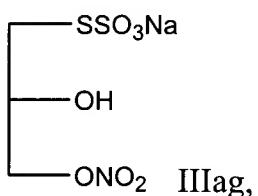
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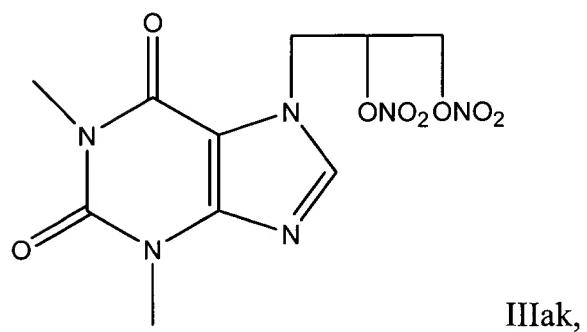
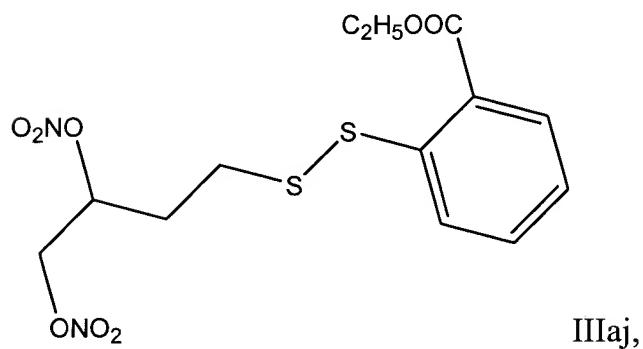
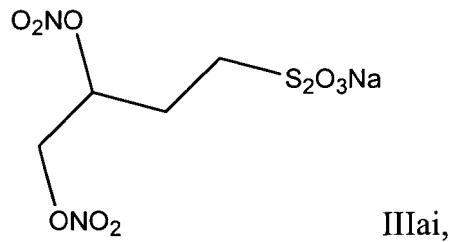
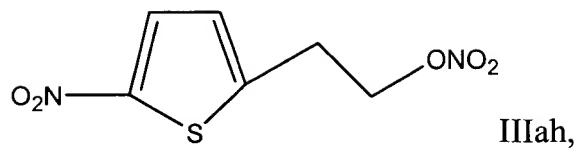
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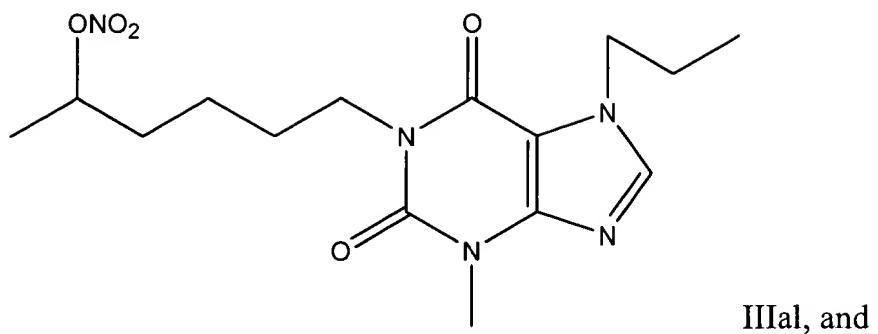


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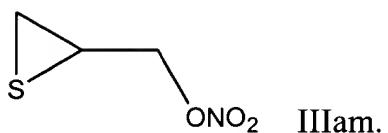


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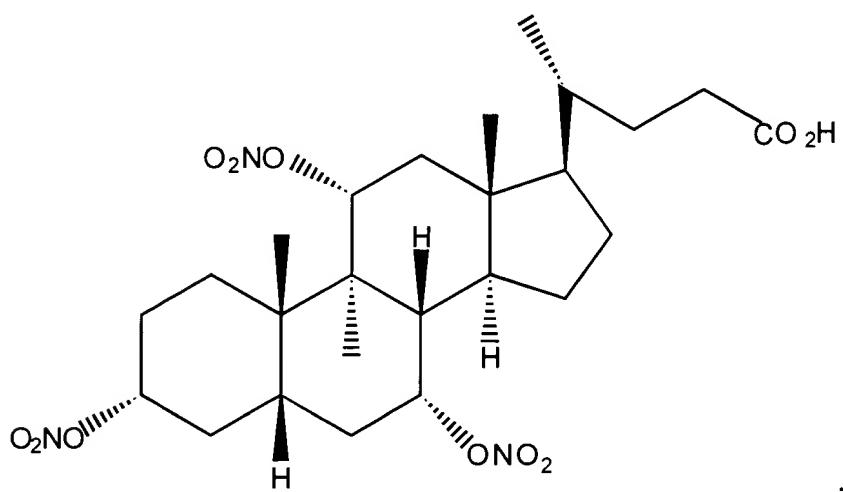


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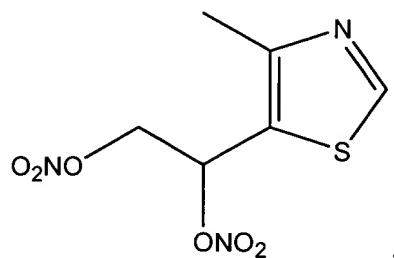


IIIam.

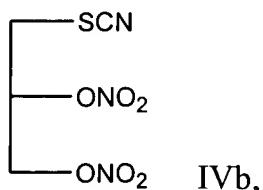
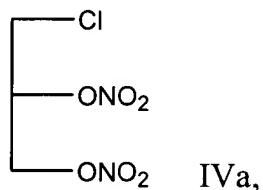
34. (Previously presented) The method of claim 33, wherein said compound has the formula IIIt:

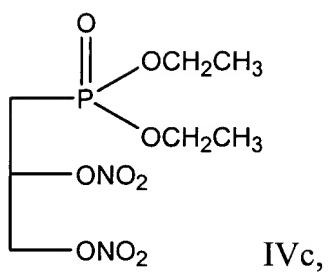


35. (Previously presented) The method of claim 33, wherein said compound has the formula IIIf:

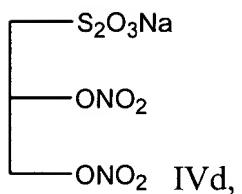


36. (Currently amended) A method of providing sedation or mitigating reducing anxiety, aiding sleep, or inducing sleep in a subject in need thereof, comprising administering to said subject an effective amount of a therapeutic compound selected from the group consisting of:

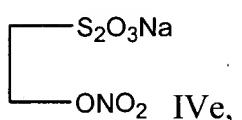




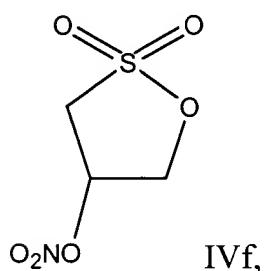
IVc,



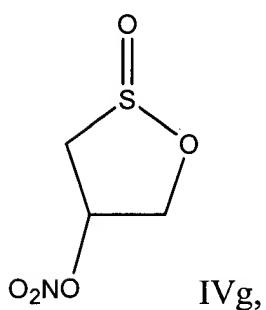
IVd,



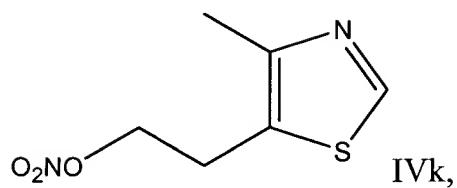
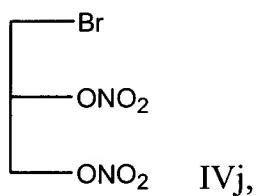
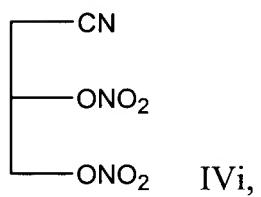
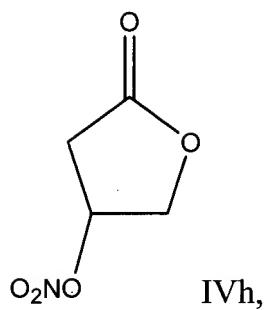
IVe,

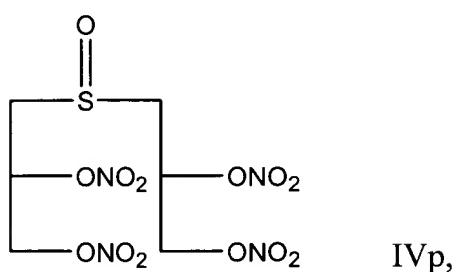
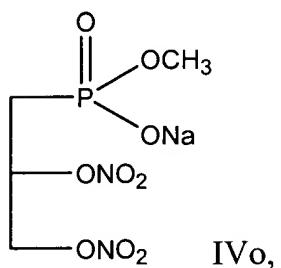
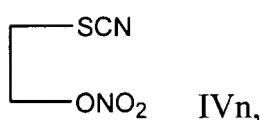
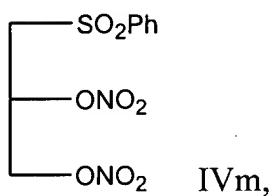
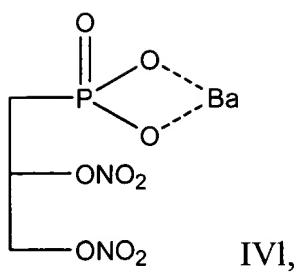


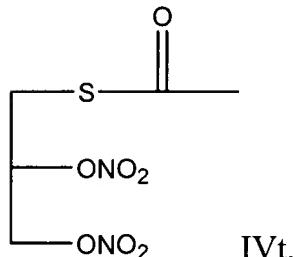
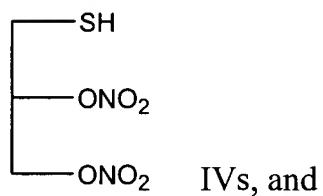
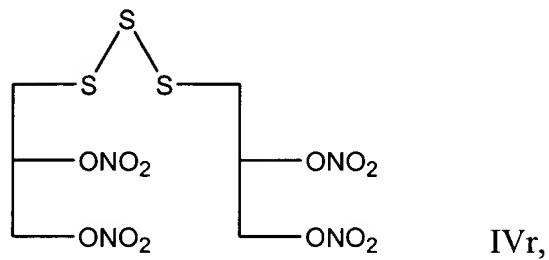
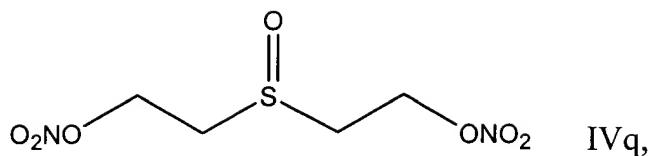
IVf,



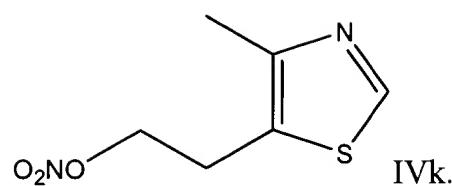
IVg,





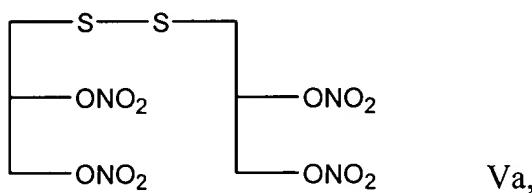


37. (Currently amended) A method of providing sedation reducing anxiety, aiding sleep, or inducing sleep in a subject in need thereof, comprising administering to said subject an effective amount of a therapeutic compound having the formula IVk:

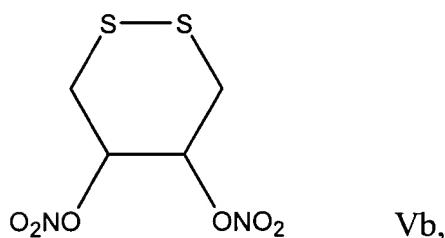


IVk.

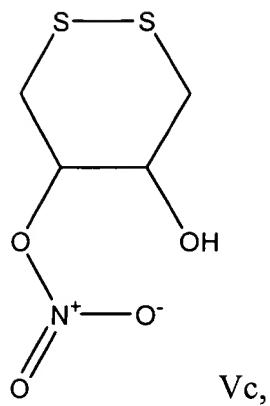
38. (Currently amended) A method of mitigating reducing anxiety, aiding sleep, or inducing sleep in a subject in need thereof, comprising administering to the subject an effective amount of a therapeutic compound selected from the group consisting of:



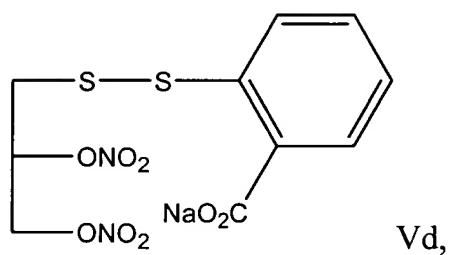
Va,



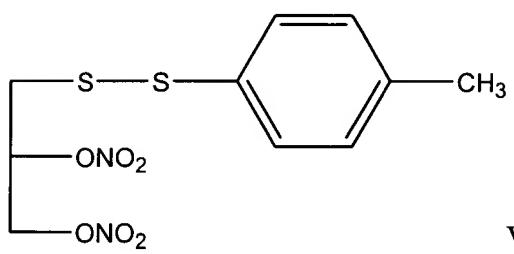
Vb,



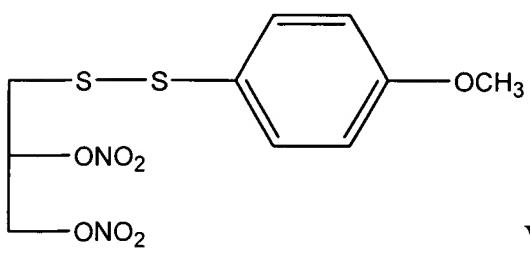
Vc,



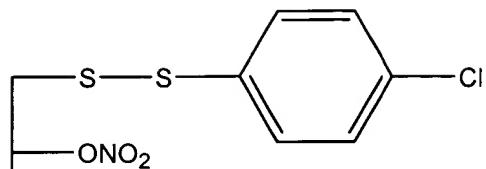
Vd,



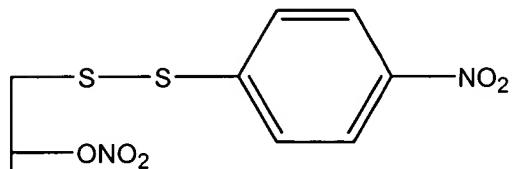
Ve,



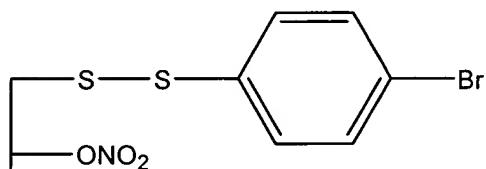
Vf,



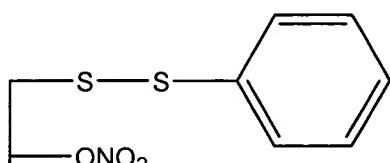
Vg,



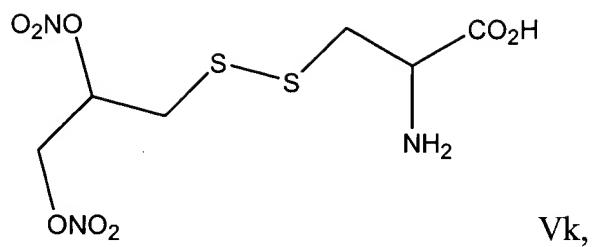
Vh,



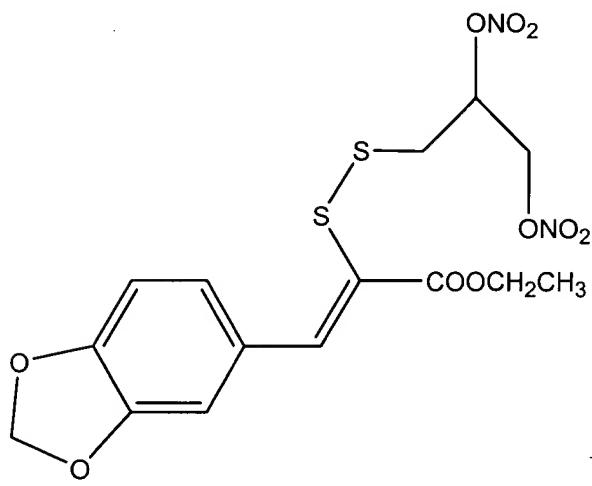
Vi,



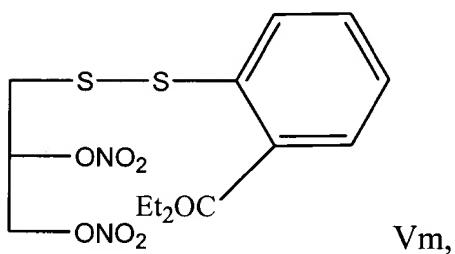
Vj,



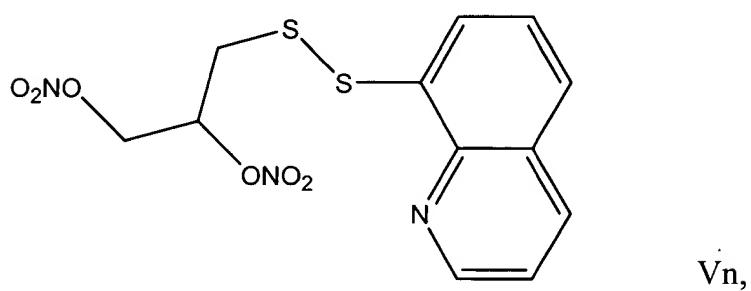
V_k,



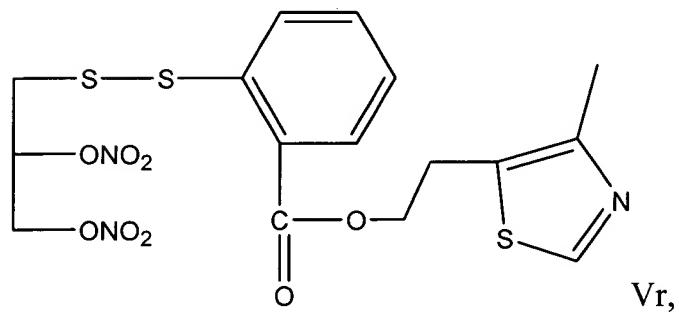
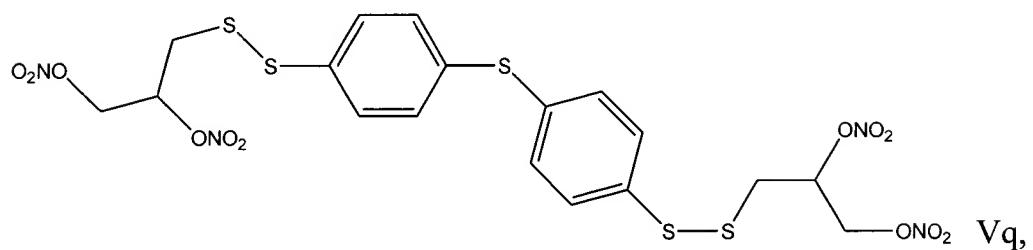
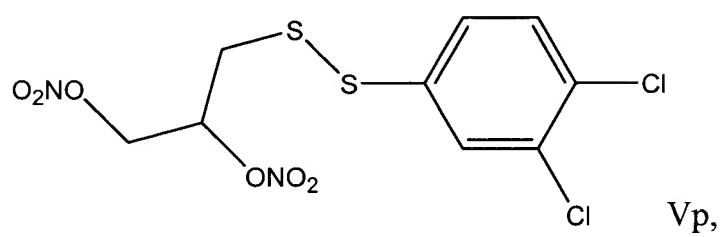
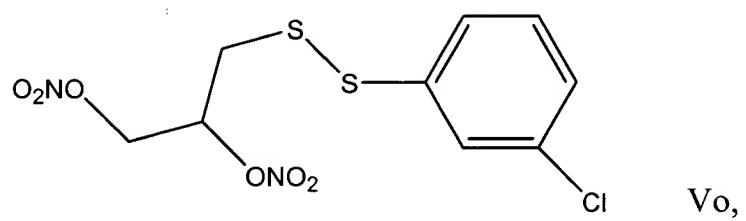
V_l,

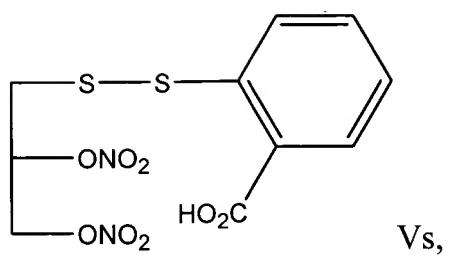


V_m,

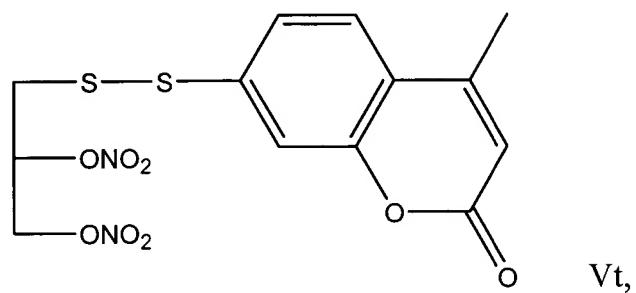


V_n,

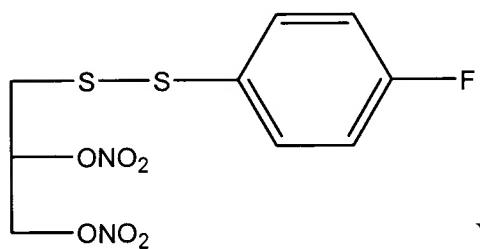




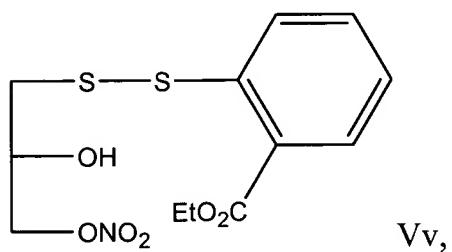
Vs,



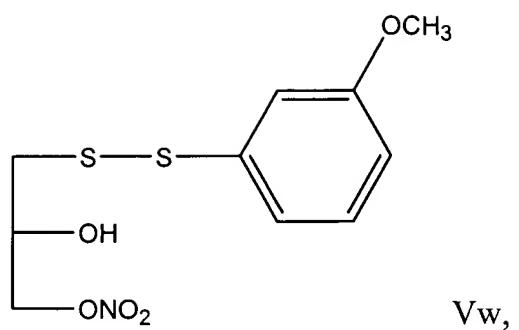
Vt,



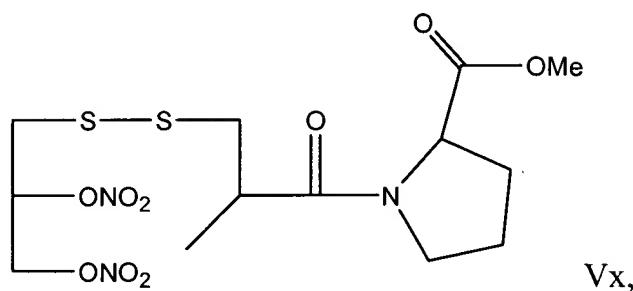
Vu,



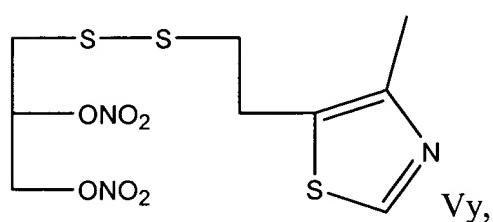
Vv,



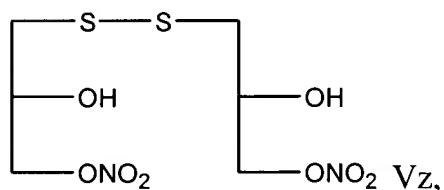
$V_w,$

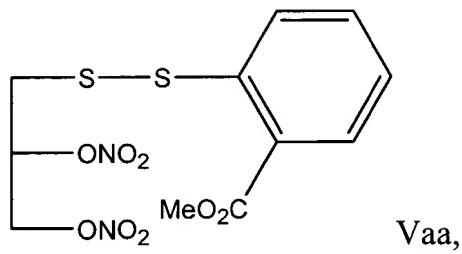


$V_x,$

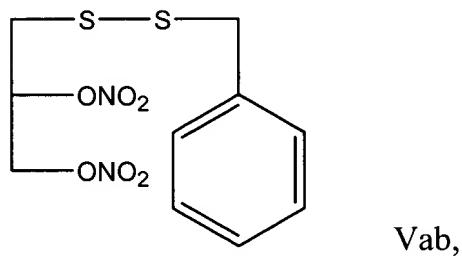


$V_y,$

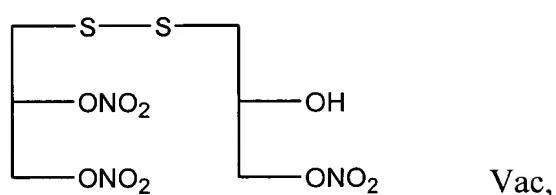




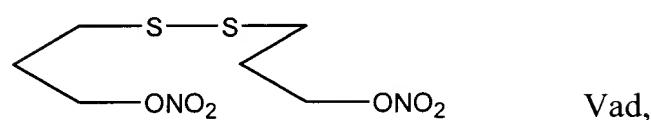
Vaa,



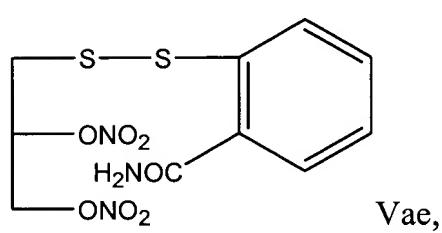
Vab,



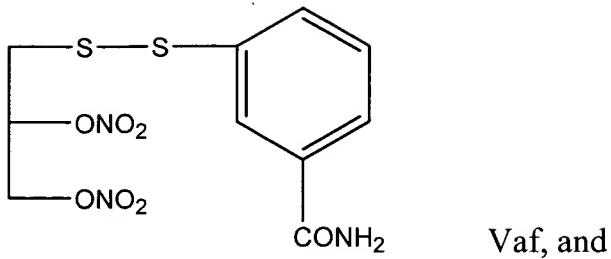
Vac,



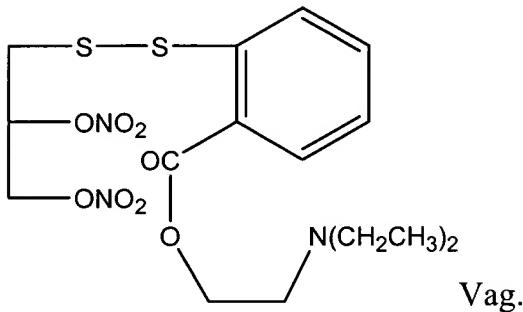
Vad,



Vae,

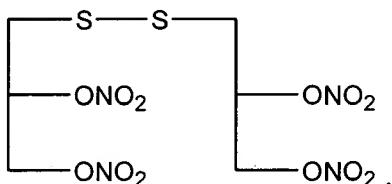


Vaf, and

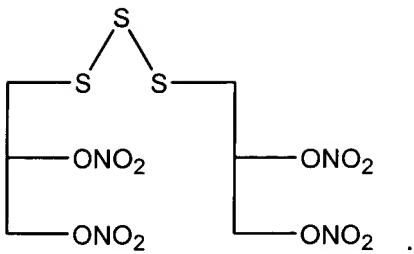


Vag.

39. (Previously presented) The method of claim 38, wherein said compound has the formula Va:



40. (Currently amended) A method of mitigating reducing anxiety, aiding sleep, or inducing sleep in a subject in need thereof, comprising administering to said subject an effective amount of a therapeutic compound having the formula IVr:



41. (Previously presented) The method of claim 11, wherein

G^2 is not R^N-Z^N ; wherein

R^N is any aryl or heteroaryl group and Z^N is $(\text{CO})_{mm}-X^N_{nn}-Y^N_{oo}$; wherein
 mm, nn, oo are 0 or 1 and X^N, Y^N are NH, NR^{NN}, O or CH₂; wherein
 R^{NN} is a C₁ – C₁₂ alkyl group.

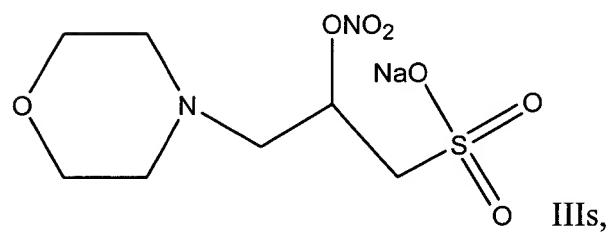
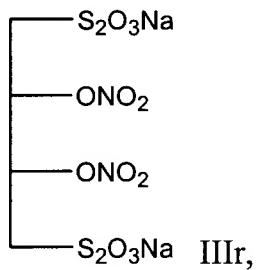
42. (Canceled)

43. (Previously presented) The method of claim 16, wherein

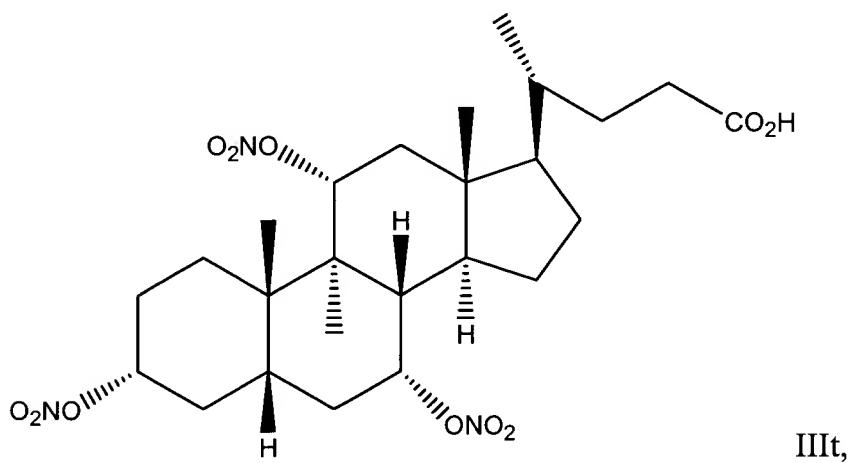
X is CH₂, CF₂, O, NH, NMe, S, SCN, SCN₂H₂(R¹⁵)₂, SCN₂H₃(R¹⁵), SC(O)N(R¹⁵)₂,
SC(O)NHR¹⁵, SO₃M, SH, SR⁷, SO₂M, S(O)R⁸, S(O)₂R⁹, S(O)OR⁸, S(O)₂OR⁹, C(O), SO,
SO₂, C(O)(SR¹³), SR⁵, SSR⁷ or SSR⁵; and

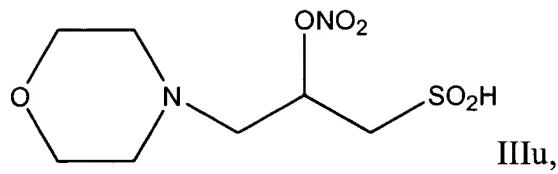
Y is SCN, SCN₂H₂(R¹⁵)₂, SCN₂H₃(R¹⁵), SC(O)N(R¹⁵)₂, SC(O)NHR¹⁵, SO₃M, SH,
SR⁷, SO₂M, S(O)R⁸, S(O)₂R⁹, S(O)OR⁸, S(O)₂OR⁹, C(O)(SR¹³), SR⁵, SSR⁷ or SSR⁵, or
does not exist.

44. (New) A method of providing sedation or anesthesia in a subject in need thereof, comprising administering to the subject an effective amount of a therapeutic compound selected from the group consisting of:

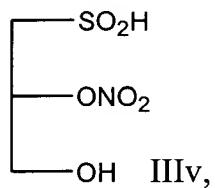


IIIss ,

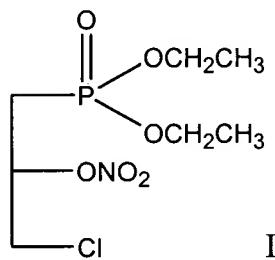




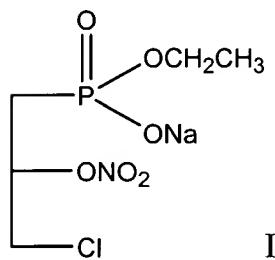
IIIu,



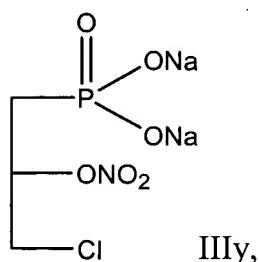
IIIv,



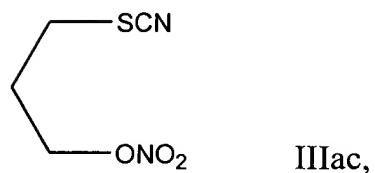
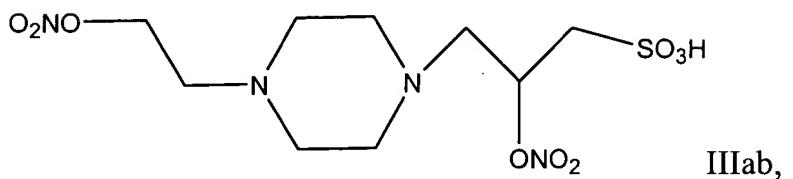
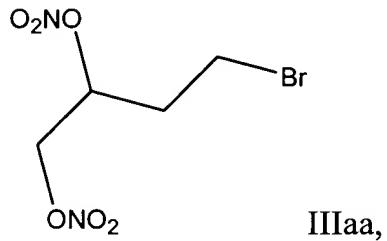
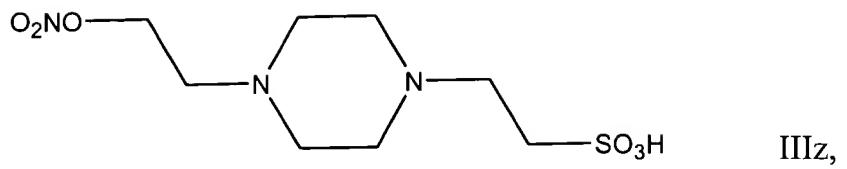
IIIw,

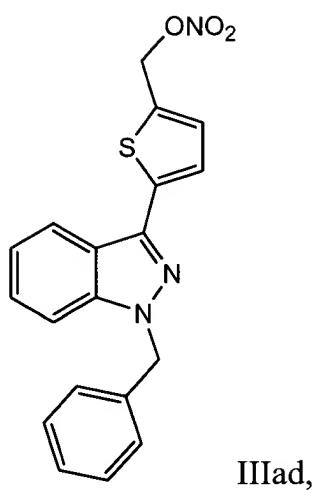


IIIx,

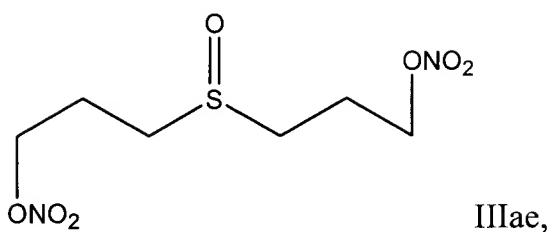


IIIy,

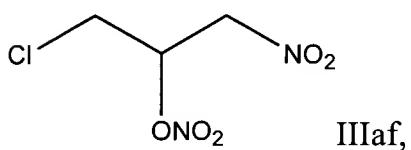




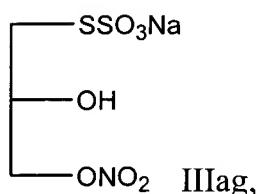
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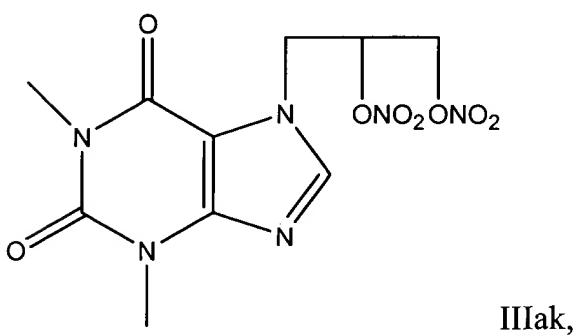
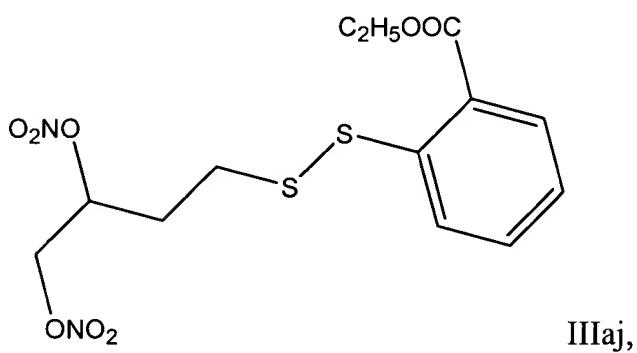
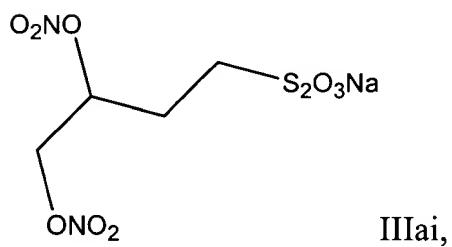
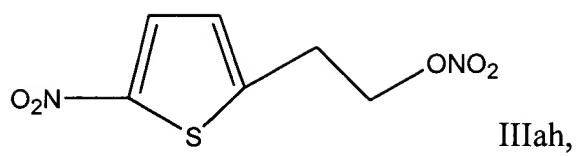
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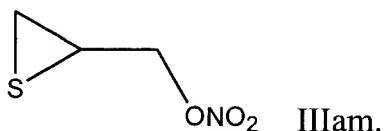
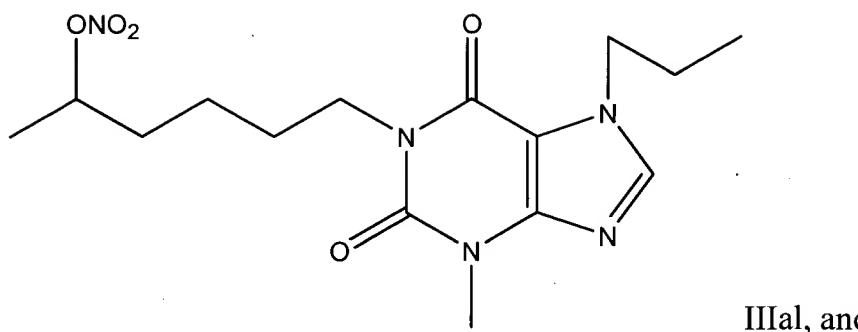


IIIaf,

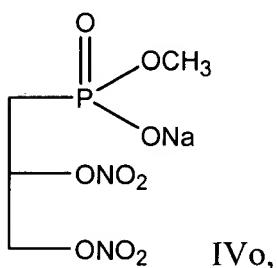
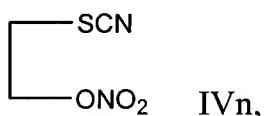


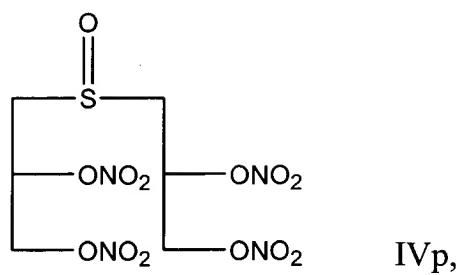
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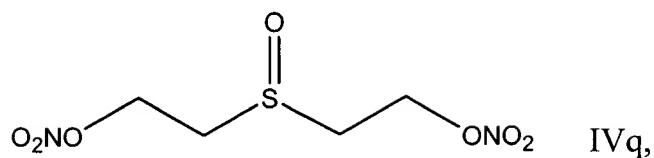


45. (New) A method of providing sedation or anesthesia in a subject in need thereof, comprising administering to said subject an effective amount of a therapeutic compound selected from the group consisting of:

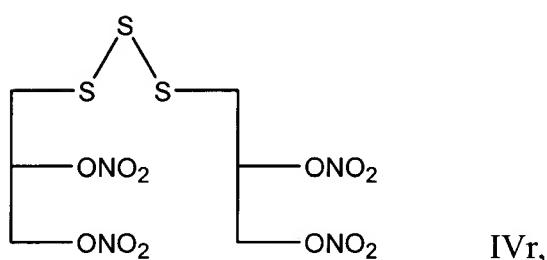




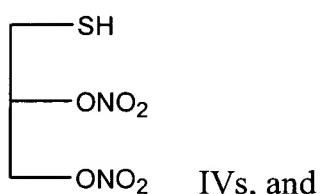
IVp,



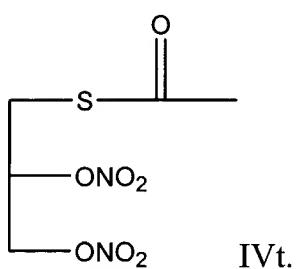
IVq,



IVr,

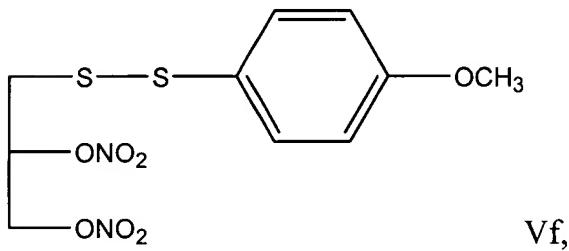
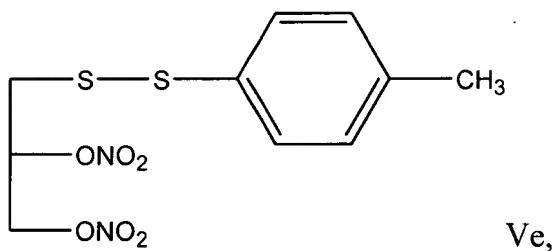
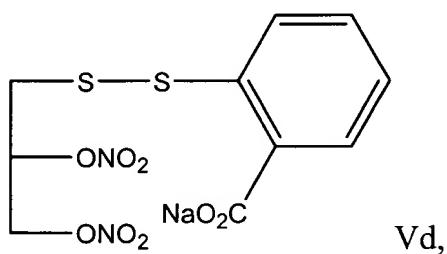


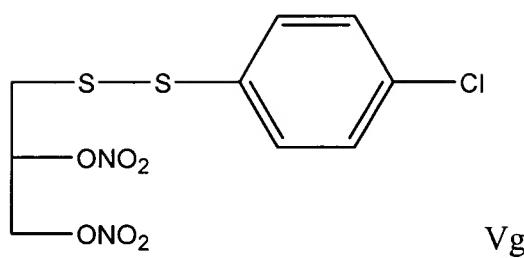
IVs, and



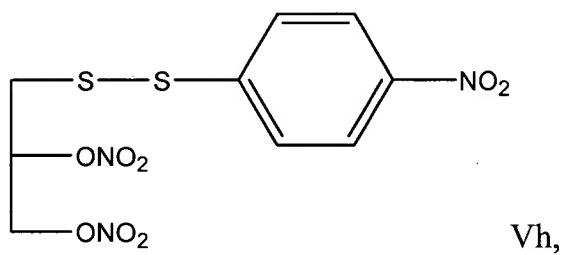
IVt.

46. (New) A method of providing sedation or anesthesia in a subject in need thereof, comprising administering to said subject an effective amount of a therapeutic compound selected from the group consisting of:

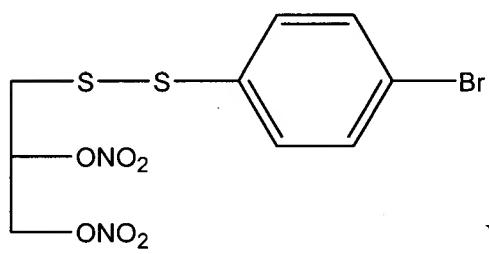




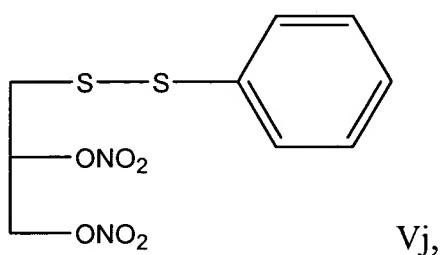
Vg,



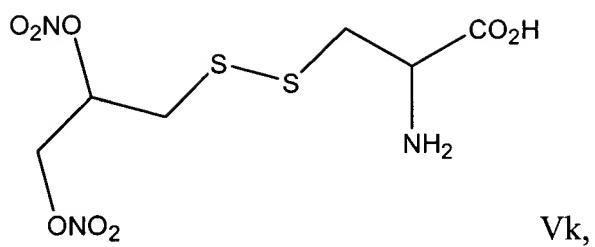
Vh,



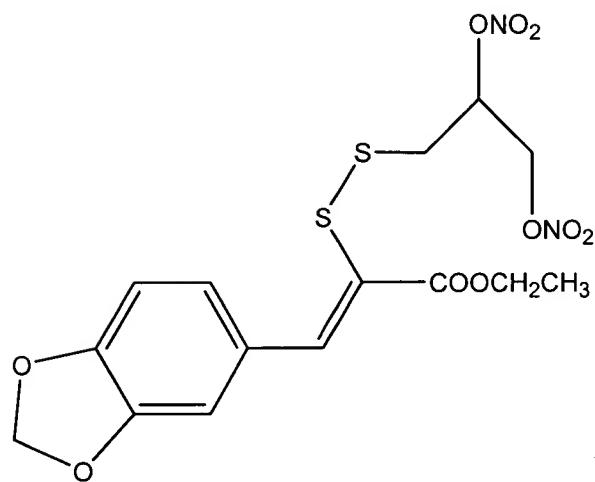
Vi,



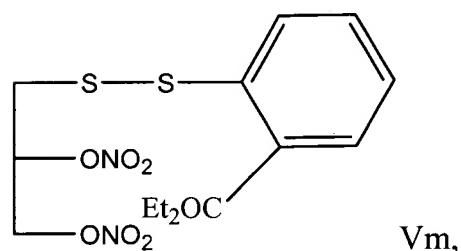
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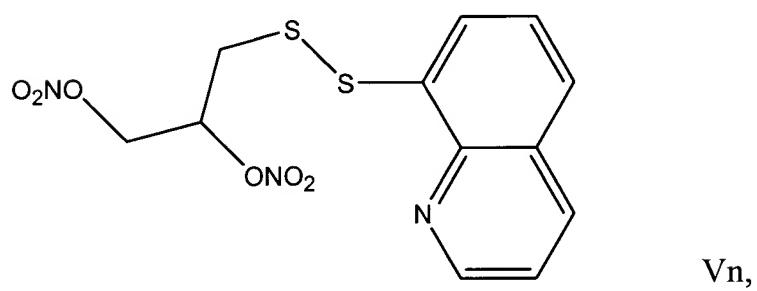
V_k,



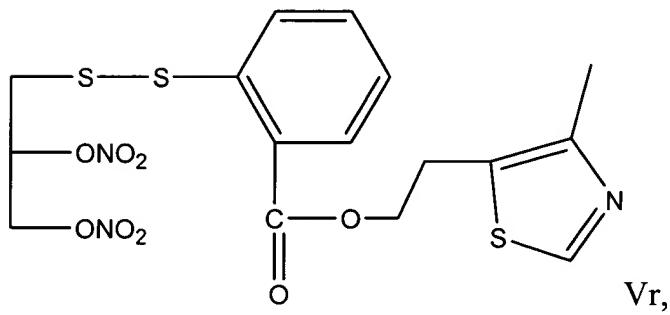
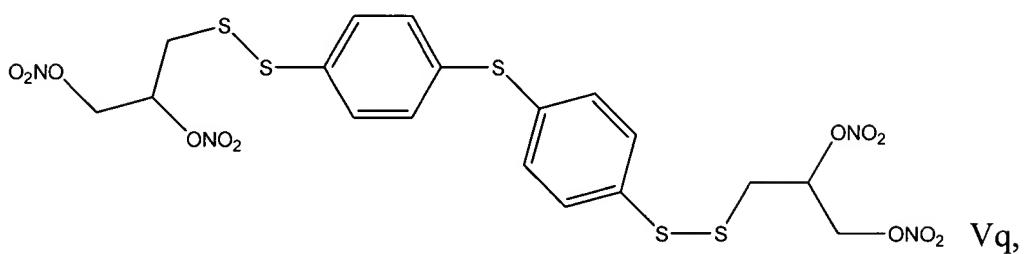
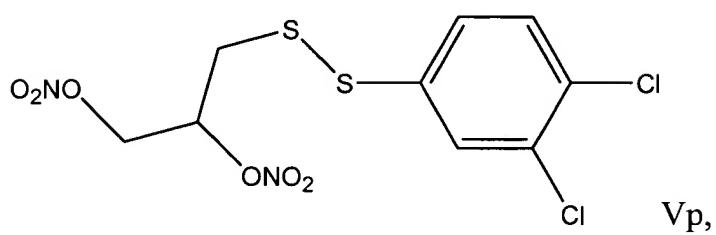
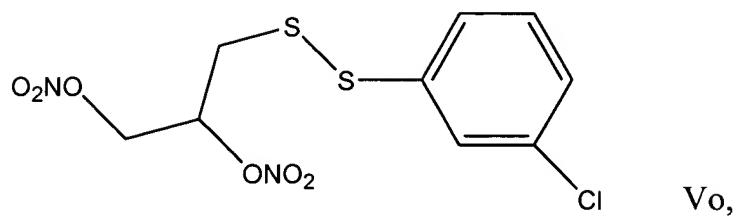
V_l,

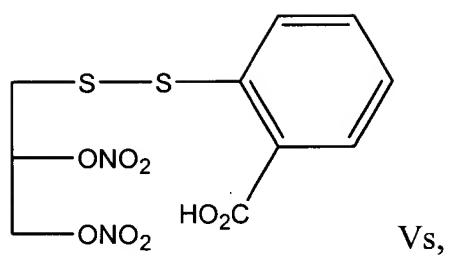


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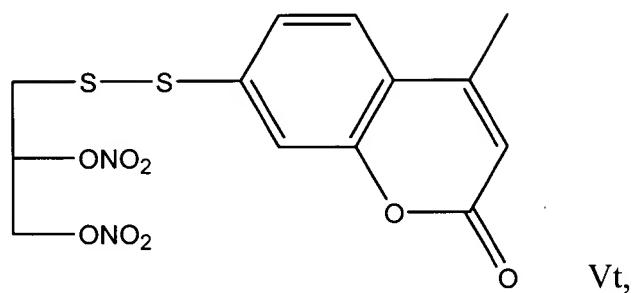


V_n,

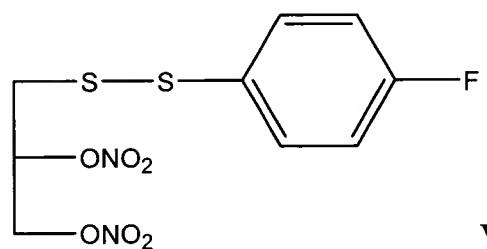




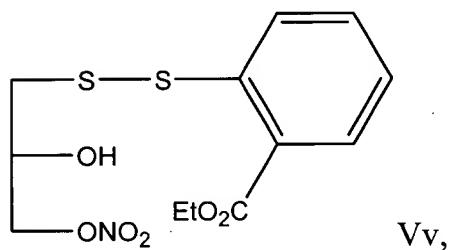
Vs,



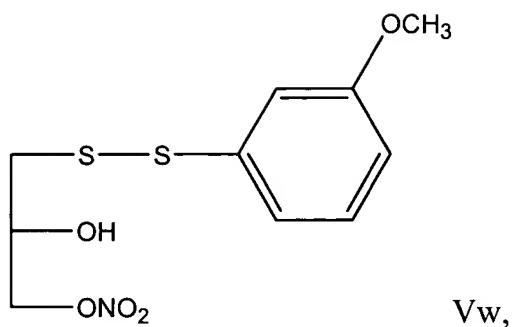
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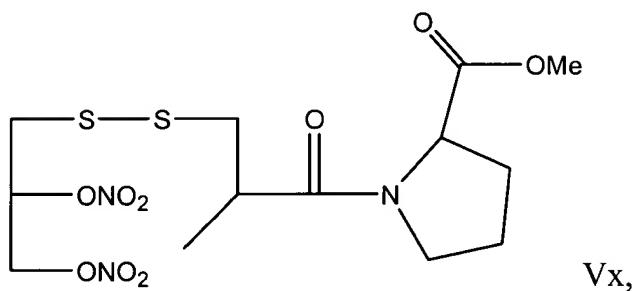
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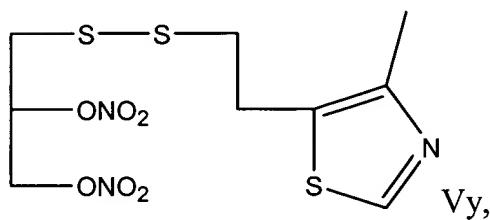
Vv,



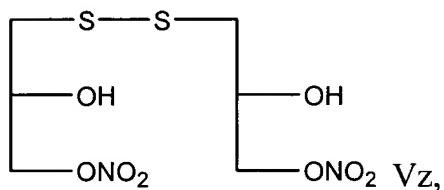
$V_w,$

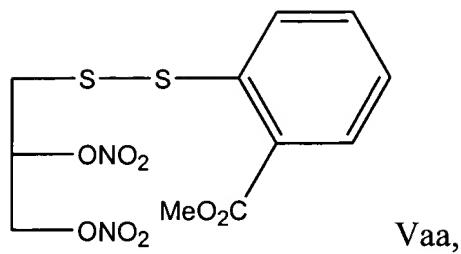


$V_x,$

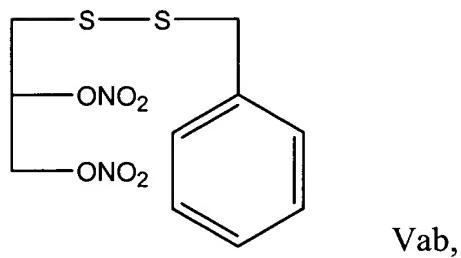


$V_y,$

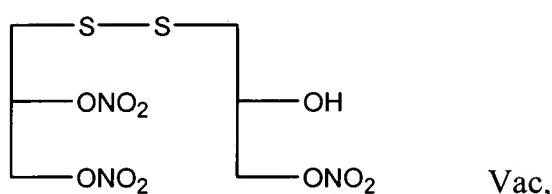




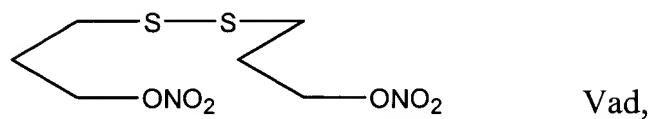
Vaa,



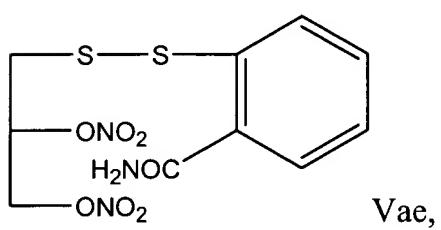
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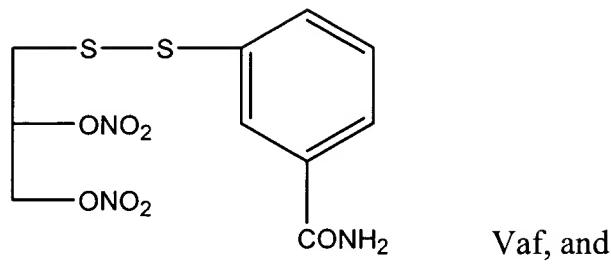
Vac,



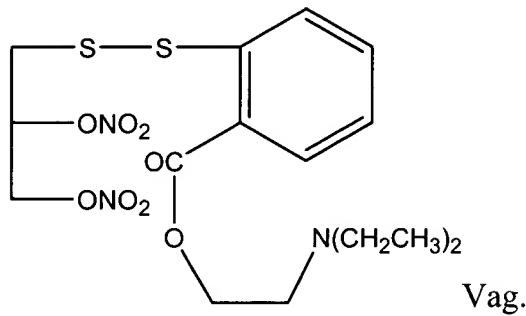
Vad,



Vae,



Vaf, and



Vag.